



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,140	07/09/2003	Daniel J. Turk	3994994-144415	2080
23570	7590	05/28/2008	EXAMINER	
PORTER WRIGHT MORRIS & ARTHUR, LLP			KIM, EUNHEE	
INTELLECTUAL PROPERTY GROUP			ART UNIT	PAPER NUMBER
41 SOUTH HIGH STREET			2123	
28TH FLOOR				
COLUMBUS, OH 43215				
		MAIL DATE	DELIVERY MODE	
		05/28/2008	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/616,140	TURK ET AL.	
	Examiner	Art Unit	
	Eunhee Kim	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 07 February 2008.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 21-32 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 21-32 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

- Certified copies of the priority documents have been received.
- Certified copies of the priority documents have been received in Application No. _____.
- Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____ .	6) <input type="checkbox"/> Other: _____ .

DETAILED ACTION

1. The amendment filed 02/07/2008 has been received and considered. Claims 21-32 are presented for examination.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 21-23, and 25-32 rejected under 35 U.S.C. 103 (a) as being unpatentable over Faruque et al. (U.S. Pub. No 2003/0149500), in view of Hazama et al. (U.S. Patent No. 6,212,441).

As per claim 21, Faruque et al. teaches a continuous loop integrating virtual simulation model information compiled from disparate sources involved in the development of a mechanical assembly (Abstract, Fig. 1, Paragraph [0027]) comprising:

disparate sources of virtual simulation model information distributed among a plurality of design, assembly and simulation testing members of an enterprise task group associated with the development of a mechanical assembly (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0038], and [0041]);

workstation, each 1) associated with at least one of the disparate sources of information distributed among the design, assembly and simulation testing members of the task group, and 2) located apart from the central master record database (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0038], and [0041]);

separate data files and separate program functions stored in a retrievable format assembled in one or more lists 1) identifying a model of a mechanical assembly to be simulated (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0038], and [0041]);

2) identifying, with respect to the mechanical assembly to be simulated, parts of the mechanical assembly, characteristics of the parts, connections capable of use with the

parts, and characteristics of the connections used with the mechanical assembly (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0038], and [0041]-[0043]); and

3) identifying virtual data files associated with the parts, connections and characteristics (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0038], and [0041]-[0043]);

a central master record database wherein separate data files and separate program functions are maintained, the data files and program functions being accessible by a task group member from a work station upon the selection of a data file and program function from a list (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0038], and [0041]-[0043]):

a network linking the work stations and the central master record database (Fig. 1, [0027]);

one or more menu associated with the lists accessible at a workstation (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0038], and [0041]-[0043]) for

1) selecting from a list a plurality of parts to be conjoined in a simulation model from the parts in the list (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0038], and [0041]-[0043]);

2) retrieving the data files associated with the parts selected (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0038], and [0041]-[0043]);

3) associating the selected parts and the characteristics of the parts retrieved (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0038], and [0041]-[0043]);

- 4) selecting one or more connection joining the parts (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0038], and [0041]-[0043]);
- 5) retrieving the data files from the library associated with the one or more connection selected (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0038], and [0041]-[0043]);
- 6) associating the characteristics of the one or more connection selected with selected parts in a virtual simulation model wherein the selected parts are to be conjoined by the selected connection (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0038], and [0041]-[0043]);
- 7) processing the selected parts through a mesh process (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0038], and [0041]-[0043]);
- 8) saving the assembly mesh data in the central master record database (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]);
- 9) building the simulation model by associating mesh data with connection data (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]);
- 10) translating the assembly as built into a virtual simulation format data record (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]);
- 11) selecting a virtual simulation of the mechanical assembly to be evaluated (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]);

- 12) recording a data record of the characteristics of the simulation model in the virtual simulation (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]);
- 13) recording the data record of the simulation model and the characteristics of the simulation model determined upon the performance of a virtual simulation (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]); and
- 14) including, upon the completion of a virtual simulation, as a list item, the data record of the simulation model and the characteristics of the virtual simulation of the model for selection and retrieval from a list as a discrete data file records of mesh, assembly, and evaluation characteristics of the simulation model evaluated (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043], [0048]-[0052]).

Faruque et al. fails to teach explicitly a plurality of workstations.

Hazama et al. teaches a plurality of workstations (Fig. 1).

Faruque et al. and Hazama et al. are analogous art because they are both related to a method of a design system.

Therefore, it would have been obvious to one of ordinary skill in the art of at the time the invention was made to include a plurality of workstations of Hazama et al., in the method of interactively assembling a model of Faruque et al. because the a plurality of workstations is a well known process for a ordinary skilled artisan in a method of interactively assembling a model. Hazama et al. teaches an advantageous system that provides central stored the design and

the job so they can be easily accessed and retrieved from any area in the factory (Col. 4 lines 9-35).

As per claim 22, Faruque et al. teaches a continually updated data loop interconnected with the central master record database whereby a data file record of the characteristics of the simulation model and the results of the virtual simulation performed upon the simulation model are maintained such that the data file record of the simulation model and the characteristics of the virtual simulation supplant in the list any previous data file record associated with a previous rendition of the simulation model and the characteristics of the previous rendition (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043], [0048]-[0052]).

As per claim 23, Faruque et al. teaches wherein the data file record of the simulation model includes data concerning crash impact, durability and noise characteristics of the simulation model retrievable at the work stations of the members of the task group associated in an enterprise development of a mechanical assembly (Fig. 1-4E, Paragraph [0021], [0025], [0033]).

As per claim 25, Faruque et al. teaches a menu associated with the work stations includes a program function associated with a mesh part database for identifying simulation models for selection from the lists (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]).

As per claim 26, Faruque et al. teaches wherein a work station includes a limited menu restricting access of the work station to one or more combined functions selected from the group of (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]):

- 1) selecting a plurality of parts and retrieving the data files associated with the parts selected (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]);
- 2) associating with the mechanical assembly the selected parts and the characteristics of the parts retrieved (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]);
- 3) selecting a connection and retrieving the data files from the library associated with the connection (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]);
- 4) associating the characteristics of the connection selected with selected parts in a simulation model in which the selected parts are to be conjoined and processing the associated connections and parts through a mesh process (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]);
- 5) saving the mesh process data in a database, building the mechanical assembly and translating the assembly into a virtual simulation format data record (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]);
- 6) performing a virtual simulation of the simulation model, recording a data record of the characteristics of the simulation; and compiling the data record of the simulation model and the characteristics of the virtual simulation in a format retrievable as a listed item in the central master record database (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]).

As per claim 27, Faruque et al. teaches wherein the lists are maintained in a central master file database that includes parts data records associated with CAD data, mesh data, connection data, assembly data, stock data, and evaluation data (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]).

As per claim 28, Faruque et al. teaches the work stations associated in the network involved in design, assembly and simulation testing of a designated simulation model (Fig. 1). Faruque et al. fails to teach singly identifiable with task group members separately. Hazama et al. teaches singly identifiable with task group members separately (Fig. 1).

As per claim 29, Faruque et al. teaches a continuous loop for refining the design of a mechanical model in a virtual format from the beginning of a design process to the end of a design process for a designated mechanical assembly (Abstract, Fig. 1-4, the description, [0052]) comprising:

a library maintained in a central master file database that includes selectable from a list parts data records. CAD data, mesh data, connection data, assembly data, stock data, and evaluation data (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]); work station each work station located apart from the central master file database and a separate function involved with the design, assembly and simulation testing of the designated mechanical assembly (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]);

a limited menu at each work station restricting a member's access to a work station dependent upon a member's association with a design, assembly or simulation group, the functions associated with the list items (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]) comprising:

- 1) selecting a plurality of parts and retrieving the data files associated with the selected parts from the library (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]);
- 2) associating the selected parts and the characteristics of the parts retrieved with the mechanical assembly (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]);
- 3) selecting a connection from the library and retrieving the data files from the library associated with the connection (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]);
- 4) associating the characteristics of the connection selected with the selected parts that are to be conjoined in a model and processing the associated connection and parts through a mesh process to provide an assembly mesh (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]);
- 5) saving data associated with the assembly mesh in a database, building the model and translating the model into a virtual simulation format data record (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]);

6) performing a virtual simulation of the model, recording a data record of the characteristics of the simulation (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043], [0048]-[0052]);

7) returning the data record of the model and the characteristics of the virtual simulation of the model to the library (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043], [0052]); and

8) replacing any prior record of the mechanical assembly simulated with a record of the model and the characteristics of the virtual simulation of the model processed upon the completion of a virtual simulation (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043], [0048]-[0052]).

Faruque et al. fails to teach explicitly a plurality of workstations, and the work stations interconnected with the library in a network wherein the work stations are singly identifiable with task group members separately.

Hazama et al. teaches a plurality of workstations (Fig. 1), and the work stations interconnected with the library in a network wherein the work stations are singly identifiable with task group members separately (Fig. 1).

As per claim 30, Faruque et al. teaches wherein after a simulation of the model approved by one or more member of the task group, the design and assembly characteristics of the model are fixed as a final design of the designated mechanical assembly in the library (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]).

As per claim 31, Faruque et al. teaches wherein, in the process of building the assembly by associating mesh data with connection data relating to the manner in which conjoined parts are welded in the assembly, imperfections in the mesh are identified and fixed (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]).

As per claim 32, Faruque et al. teaches wherein, in the process of building the assembly by associating mesh data with connection data relating to the manner in which conjoined parts are welded in the assembly, imperfections in the mesh are identified and fixed (Fig. 1-4, Paragraph [0012], [0020]-[0027], [0029]-[0039], and [0041]-[0043]).

6. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Faruque et al. (U.S. Pub. No 2003/0149500), in view of Hazama et al. (U.S. Patent No. 6,212,441).

Faruque et al. as modified by Hazama et al. teaches most all of the instant invention as applied to claims 21-23 and 25-32 above.

Faruque et al. as modified by Hazama et al. teaches selectable data files in the list relating to connections include welds, bonds, bolts, and pin joints (Faruque et al. : [0043]).

However, Faruque et al. as modified by Hazama et al. fails to explicitly teach sealers, adhesives, and ball joints.

It was known at the time the invention was made that various types of connecting means include sealers, adhesives, and ball joints for system of interactively assembling a model. At the time the invention was made, it would have been obvious to one of ordinary skill in the art of technology of modeling and virtual evaluation system for mechanical assemblies to various types

of connecting means including sealers, adhesives, and ball joints. The motivation would have been to ensure the quality and consistency of the assembled mesh model, which results in improved the analysis (Faruque et al.: Paragraph [0035]).

Therefore it would have been obvious to modify Faruque et al. as modified by Hazama et al. to obtain the invention as specified in claim 24.

Response to Arguments

7. Applicant's arguments filed 02/07/2008 have been fully considered but they are not persuasive.

Examiner respectfully withdraws Claim Objection in view of the amendment and/or applicant's arguments.

Applicants have argued that:

Applicant submits that with respect to Faruque et al. the Examiner is applying Faruque et al. beyond any legitimate interpretation of the reference. Faruque et al. ignores the realities of specialized functions associated with a group members. Groups and tasks are each specialized, not overlapping functions. Members of different disciplines may be located in separate sites [1]. Faruque et al. describes a single user station for processing data independent of user function or user access restriction[2]; Faruque et al. stores data, only upon successful completion of a test. In reality, numerous iterations of a simulation are required with changes in design, connectors, materials and the like proposed by multiple members having different skills, with differing responsibilities in a group with a common objective[3]. Hazama et al. is similarly not applicable as Hazama et al. relates to managing customer for fabrication orders, not successive iterations of design changes consistent with defined group member responsibility in an enterprise design environment[4].

As per [1], in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e.,

specialized functions associated with a group members) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

As per [2], the examiner relies upon the teaching in Faruque et al. to teach a workstation while Hazama et al. is relied upon for a teaching of a plurality of workstations.

As per [3], it is unclear what the applicants argument is and which limitation the applicants are referring.

As per [4], in response to applicant's argument that Hazama et al. is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Faruque et al. and Hazama et al. are analogous art because they are both related to a method of a design system.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eunhee Kim whose telephone number is 571-272-2164. The examiner can normally be reached on 8:30am-5:00pm Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Eunhee Kim/
Examiner, Art Unit 2123

/Paul L Rodriguez/
Supervisory Patent Examiner, Art Unit 2123